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ABSTRACT

The purposes of this study were to determine (1) the long-range effectiveness on children's cognitive and affective development of 1, 2, and 3 years of the Central Cities Early Childhood Education Program; (2) how long preschool intervention must be continued to significantly alleviate special problems of disadvantaged children; and (3) the optimum age to begin preschool intervention. Results indicate the program effectively helped children develop an adequate self-concept and social, emotional, motor, and physical skills for successful peer and teacher relations 2 and 3 years after their preschool experiences. Children maintained IQ gains measured by the Peabody Picture Vocabulary Test during preschool and 1 year later, and maintained gains made on the Slosson Intelligence Test 2 or 3 years after preschool. After 3 years of preschool, first grade entrants scored significantly higher on a school readiness test than classmates, but did not achieve as well as predicted by the end of first grade. Two years after the preschool program, children with 3 years of preschool made 1 year's gain on an achievement test but were below grade level on national norms. Intervention begun at age 3 and continued for 3 years is more beneficial than later intervention. (Author/DO)

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Final Report

Project No. 1F086
Grant No. OEC 6-72-0710-(509)

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FOLLOW-UP RESEARCH ON CHILDREN WHO WERE ENROLLED IN THE CENTRAL CITIES EARLY CHILDHOOD PROGRAM

June 29, 1973

PS 006810

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

National Center for Educational Research and Development
(Regional Research Program)

ABSTRACT

The purposes of this research study were to determine 1) the long-range effectiveness on cognitive and affective development of one, two, and three years of the Central Cities Early Childhood Education Program, 2) how long preschool intervention must be continued to significantly alleviate the special problems of disadvantaged children, and 3) the optimum age to begin preschool intervention.

Results of this study indicate the Central Cities Program was effective in helping children develop an adequate self-concept and the social, emotional, motor, and physical skills for successful peer and teacher relations two or three years after their preschool experiences. The long-term effects of the program on cognitive skills were most evident on the Peabody Picture Vocabulary Test. The children from the Central Cities Program not only maintained the I.Q. gains made on this instrument during preschool but continued to make I.Q. gains one year after preschool. Results from the Slosson Intelligence Test would indicate that the preschool program was effective in helping children maintain I.Q. scores within the normal range at the preschool entry level for two or three years after their preschool experiences.

Children who entered first grade after three years of preschool (this represents the maximum time spent in the Central Cities Program) demonstrated readiness for first grade work and scored significantly higher on a readiness test than their classmates. Achievement test results at the end of first grade indicate these children did not achieve as well as predicted on the basis of pre-readiness test scores. Two years after the preschool program the children with three years in Central Cities made one year's gain from spring to spring on an achievement test although they were below grade level on national norms.

Follow-up test results indicated intervention begun at age three and continued for three years is more beneficial than age four intervention. Sufficient data to support age two intervention were not available.

Final Report

Project No. 1F086
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FOLLOW-UP RESEARCH ON CHILDREN WHO WERE ENROLLED IN THE CENTRAL CITIES EARLY CHILDHOOD PROGRAM

Mrs. Floy L. Lysiak

Fort Worth Independent School District

Fort Worth, Texas

June 29, 1973

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
National Center for Educational Research and Development

PREFACE

This follow-up study of children who were enrolled in the Central Cities Early Childhood Education Program would not have been possible without the assistance of the Central Cities Project Director, Mr. John Barnett. Under his leadership the Central Cities staff developed the Early Childhood curriculum that benefitted not only the children enrolled in the Fort Worth program but children nation-wide who are enrolled in preschool programs using this curriculum.

Special thanks are extended to the Superintendent of the Fort Worth Independent School District, Dr. Julius Truelson, and the School Board for allowing the investigator release time from other duties to complete this study. Grateful acknowledgements are extended to the Director of Research, Dr. Charles Evans, and members of his staff for their advice and assistance.

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CHAPTER I

INTRODUCTION

Purpose

The purposes of this research study are (1) to determine the relative long-range effectiveness on cognitive and affective development after one, two and three years of Central Cities preschool education, (2) to determine how long preschool intervention must be continued to significantly alleviate the special problems of disadvantaged children, and (3) to determine the optimum age to begin preschool intervention.

Background Information

Subjects for this study were children enrolled in the Early Childhood Education Program of the Central Cities Project in Fort Worth, Texas, during its three-years of operation from September 1968 to June 1971. During this three-year period 220 children were enrolled for at least one year, and every effort has been made to follow their progress in public school programs.

The Fort Worth Central Cities Project was funded by the United States Office of Education under the Title III Elementary and Secondary Education Act and was administered by the Fort Worth Independent School District. Focus of the project was the development of an early childhood education program for disadvantaged children, who usually enter public school from one to three years behind curriculum expectations with an ever-widening gap in succeeding years. A basic premise of the program was that certain stimulating experiences in the early years of a child's life provide the foundation for intellectual development and school achievement. This program provided for these experiences during the time a large proportion of cognitive growth takes place during the preschool years.

The project began operation in September, 1968, with 170 children, ages two through five, recruited from an inner city sector of Fort Worth which is highly economically deprived. The area included 35,692 persons, of whom 95% were black. The population group represented 60% of Tarrant County's welfare recipients and 40% of its single-parent families.

The curriculum produced during the Central Cities Project went through a complete developmental process including conceptualization, design-test, pilot-test and field test. It is a language-based curriculum emphasizing language, visual, motor, and auditory training. These areas were found to represent the major learning needs of the children in the project. The lessons used were published in a set of curriculum guides which include twenty instructional units for each of four levels of difficulty. Unit topics related to the child's worlds of self, family, and community, with content interwoven with a sequence of skills in the four training areas. The curriculum provided for criterion-referenced evaluation on an individual basis after each lesson, unit, set of five units, and at completeion of a level.

Although the instructional program did not represent the total Early Childhood Education Program development through the Central Cities Project, it provided the basis for evaluating cognitive and affective gains in the children. Other vital elements of the program included food and medical services, small-group interaction, low pupil-teacher ratio, continuous inservice training for aides. and parental involvement.

Description of Experimental Preschool Program

The Early Childhood Education Program at Central Cities operated year-round from 7 A.M. to 5 P.M. five days a week during the three-year funding period. Children were picked up at their homes by a school bus at approximately 6:30 A.M. and were returned to their homes at 5:30 P.M. During the day children were taught the carefully sequenced lessons developed by the curriculum staff and were evaluated individually. Low achievers were given individual prescriptions for remediation. Lessons in each of the four training areas were taught in small groups of five or six pupils so that in the course of a day each child was participating in structured small-group activity a total of one or one and one-half hours. The remainder of the day's program included: independent activity at learning centers, creative activity such as art and music, outdoor play, eating, and napping. The entire program was based on sound principles of child development and early childhood education.

During the three years of the Early Childhood Education Program, children were given the Slosson Intelligence Test and the Peabody Picture Vocabulary Test at the beginning and the end of the school year. Results from these tests indicated that children enrolled in the Early Childhood Education Program increased their scores on these tests in direct relationship to the number of years in the program and age upon entry.

Children enrolled in the program at age three and who stayed for three years increased their IQ score on the Slosson by 13 IQ points, whereas those enrolled at age three and who stayed for two years made a mean gain of 8 IQ points. Children who entered at age four and stayed for two years increased their mean IQ scores by 9 points. Results on the Peabody Picture Vocabulary Test indicated that the children who entered at age three and who stayed for three years made a 30 points mean IQ gain during their years in the program. The Peabody Picture Vocabulary Test was not given the spring of 1970; therefore, end of program scores were not available for the children of age four who spent two years in the program. The three-year-old children with two years of the program were not given the Peabody upon entry; therefore, their gains for the two-year period were not available.

Results on the Caldwell Preschool Inventory, Tests of Basic Experience, and Metropolitan Readiness Tests indicated that children completing two or three years of the Central Cities Early Childhood Education Program were ready for first grade work in terms of test norms. (Central Cities Educational Development Center, Evaluation Report 1968-1969, 1969-1970, 1970-1971, Fort Worth, Texas.)

Statement of Problem

This follow-up research study on the children who were enrolled in the Central Cities Early Childhood Education Program is essential. The success of any preschool program for the disadvantage must be based upon the child's performance in elementary school. If the disadvantaged child develops skills in preschool which will help him make adequate academic progress in elementary school, the program must be judged as successful. Many early childhood education programs (Karnes, 1969; Weikart, 1970; Gray and Klaus, 1969; Di Lorenzo, 1968; Curtis and Berzonsky, 1967) have found that early childhood education produced significant increases on the standardized tests given the children at the time of intervention, but the children tended to show regression by the third grade.

The findings from this research study will show whether or not children who entered the Central Cities Program at age three were better prepared for elementary school and made higher scores on achievement tests than children who entered the program at age four. This longitudinal study will also show whether or not preschool score gains on standardized tests were maintained after entry into elementary school. It will also show whether or not children with three years of preschool experience maintain test score gains longer than children with one or two years.

CHAPTER II

METHODS AND PROCEDURES

This follow-up study of children previously enrolled in the Central Cities Early Childhood Education Program consisted of locating, testing, and obtaining from teachers a social rating scale on each child. Of the 220 children who had completed at least one year of the preschool program and on whom test scores from preschool were available, only 175 children were located for the Spring 1972 testing and 177 for the Spring 1973 testing. A concerted effort was made to locate all children: school records were checked as well as previous addresses. The 177 children located were enrolled in 24 schools administered by the Fort Worth Independent School District. The greatest loss of children was at the kindergarten and pre-kindergarten level. Since school attendance at kindergarten and pre-kindergarten is not required, many of these children were not enrolled in school and could not be located.

Families in the inner city of Fort Worth tend to be very mobile. Central school records might indicate a child was enrolled at one particular school, and when that school was contacted, the child had already moved to another school. Fifteen children from grades one, two, and three had moved out of town, and one child had been killed in a home accident, one child had been severely injured in an automobile accident last year and had not been able to return to school. Two children were in Special Education and were not tested. Seven children were enrolled at schools in Fort Worth, but their attendance was so poor they were not available for testing. A few children were given only part of the test battery because illness prevented their completion of the test. The tests were given in two or three sessions.

Analysis of Test Data

Longitudinal growth charts of Slosson and Peabody test results were maintained on all groups from time of entry into the Central Cities Early Childhood Education Program to the present. Key test dates were considered as the time of entry into the Central Cities Early Childhood Education Program, time of departure from the program, April 1972 and April 1973. From these charts, a "t" test was made to determine if significant increases in scores due to participation in the Early Childhood Education Program were made and if lasting effects of preschool education were evident. Only children with scores at all four key testing dates were used in determining longitudinal mean score gains for each group.

The mean and standard deviation for each group of children were computed from the spring tests in 1972 and 1973. The results were compared to national norms for the tests, although the researcher originally proposed using the same comparison group of children who had attended a day-care program at the same time the experimental groups were in the Central Cities Education Program. When the research proposal was reviewed by OEO reviewers, it was suggested that the comparison groups be eliminated and national norms be used for comparison.

National norms on the Self-Concept Inventory, How I Feel About Myself by Fae Lysiak. Copyrighted 1972, have not been established but local norms for middle-income and low-income children have been developed. The children were rated on the Social Rating Scale by their teachers in comparison to other children in their classroom on a one-to-five scale with three as the average

or center of the scale. Therefore, in comparing children's scores with the norm or average, the score of three was used as the norm for each trait (a copy of the Social Rating Scale and a list of statements from the Self-Concept Inventory, How I Feel About Myself are given in the Appendix). The Slosson Intelligence Test, Peabody Picture Vocabulary Test, and the Self-Concept Inventory was given one day, and the California Achievement Test was given in two sessions on another day. Social Rating Scales were completed by each child s teacher.

Longitudinal charts showing Slosson Intelligence Test and Peabody Picture Vocabulary Test scores were maintained on the children from time of entry into the Central Cities Early Childhood Education program to the present. Preschool test scores from date of entry to date of departure from Central Cities were used to show gains made on these instruments during preschool. Longitudinal charts were maintained only on children with entry and departure test scores.

Children included in this follow-up study entered the Central Cities program at ages two, three, or four. One group of children entered the program at age three in 1968 and spent three years in the program. Most of the other children spent only one or two years in the program. The children are identified by groups based upon present grade level, age upon entry into the Central Cities program, and number of years in the program.

Description of Groups Tested

Group I--Grade 3 is comprised of children who entered the program in 1968 at the age of four and spent two years in the Central Cities program before entry into first grade. They were completing the third grade at the time of the April 1973 testing. Of the 50 children in this group, 44 were located in April 1972 and April 1973 for testing.

Group II--Grade 2 was composed of children who entered the program at age three and received three years of preschool education at Central Cities prior to entry into first grade. This group of children had made mean gains of 13 I.Q. points on the Slosson Intelligence Test and a mean gain of 30 I.Q. points on the Peabody Picture Vocabulary Test during their preschool years and were completing the second grade at the time of April 1973 testing.

Group III--Grade 1 was composed of children who entered the Central Cities program at age three in 1969 and spent two years in the program prior to entry into public school kindergarten in 1972. Of the forty-five children in this group, only 29 attended kindergarten in the Fort Worth Public Schools and could be located in April 1972. In April 1973, thirty-five of these children were located and tested.

Group IV--Grade 1 was composed of 5 children who had three years of preschool as they had entered the program in 1968 at age two. Of the 18 children of age two enrolled in the program in 1968, only six remained in the preschool program for three years. Of these six children, only five could be located for testing in 1973. One child did not have any entry test scores at age two.

Group V--Kindergarten was composed of 39 children who entered the preschool program at age three in 1970 and spent one year in the Central Cities Early Childhood Education Program before the project ended. Of these 39 children, 27 were enrolled in the Fort Worth Public Schools' four year old program in the 1971-72 school year that used the Early Childhood Education curriculum developed during the Central Cities Project. These 27 children were tested in April 1972. In April 1973, thirty children from this group were located in kindergarten in the Fort Worth Public Schools.

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Group VI was composed of 9 children who had two years of Central Cities preschool education. They had entered the program at age two in 1969 and continued until the close of the project in 1971. Of the 18 children of age two enrolled in the program in 1969, only 11 remained until it closed in 1971. Only 9 of these 11 could be located for testing in April 1973.

Group VII was composed of 17 children who entered the preschool program at age two in 1970 and stayed for one year. During the school year of 1971-1972, these children were not in public school. In 1972-1973, nine of these children were located in the four year old program of the Fort Worth Public Schools and were tested.

Test Data Collected

Since the Slosson Intelligence Test and Peabody Picture Vocabulary Tests were given during preschool at Central Cities, these tests were given again in April 1972 and April 1973 to all groups. A complete list of tests administered, dates administered, and groups tested are shown below.

Tests, Dates and Groups Tested

Test	Dates	Groups
Slosson Intelligence	April 1972 and April 1973	I, II, III, IV, V, VI, VII
Peabody Picture Vocabulary	April 1972 and April 1973	I, II, III, IV, V, VI, VII
Self-Concept Inventory	April 1972 and April 1973	I, II, III, IV, V, VI, VII
Metropolitan Readiness	October 1971 and October 1972	II, III, IV
California Achievement		
Level 1	April 1972	I
Level 2	April 1973	I
Level 1	April 1972 and April 1973	II
Level 1	April 1973	III, IV
Social Rating Scale	April 1972 and April 1973	I, II, III, IV, V, VI

CHAPTER III

RESULTS

Organization of Data

Test data was obtained on children who were enrolled in the Central Cities Early Childhood Program during its years of operation in 1968-1971. During its three years of operations, five groups of children whose ages were two through five were enrolled in the program for varying lengths of time and entered at various ages. Results are reported separately for each group in order to answer the objectives of this study which are (1) to determine the long-range effectiveness of one, two, or three years of Central Cities preschool education on the cognitive and affective development of children; (2) to determine how long preschool intervention must be continued to alleviate the special problems of disadvantaged children; and (3) to determine the optimum age to begin for preschool intervention.

Results obtained on tests and data-gathering instruments for 1972 and 1973 are presented for each group and summarized. Groups are identified by current grade level, age at entry into preschool, and number of years in the Central Cities preschool program. After 1972-1973 results are reported for each group, longitudinal charts for each group are given and summarized.

Group I. Grade 3 Test Results

Group I, Grade 3 entered preschool at age 4 for two years. The results for tests and data-gathering instruments given during the two years of this study are given in Tables 1 and 2. A complete description of all tests and data-gathering instruments is given in the Appendix.

Table 1. Group I. Grade 3

Mental Maturity Test Scores for 1972 and 1973

Test	No.	Mean IQ May 1972	S.D.	No.	Mean IQ April 1973	S.D.
Slosson Intelligence Test	44	94.31	10.62	44	92.50	14.08
Peabody Picture Vocabulary Test (Form A--1972, Form B--1973)	44	84.31	8.79	44	76.66	10.29

Table 2. Group I, Grade 3

California Achievement Test, Level 2, Form A, April 1973

Subtest	No.	Mean Raw Score	S.D.	Mean Test Grade Equivalent	Actual Grade Placement	Nat'l %ile Norm
Reading Vocabulary	38	21.68	8.83	1.9	3.8	10
Reading Comprehension	38	18.82	10.46	2.4	3.8	16
Math Computation	38	43.84	13.78	2.7	3.8	14
Lauguage Usage	38	10.55	4.68	2.0	3.8	14

Table 3. Group I, Grade 3

California Achievement Test, Level 1, Form A, April, 1972

Subtest	No.	Mean Raw Score	S.D.	Mean Test Grade Equivalent	Actual Grade Placement	Nat'l %ile Norm
Reading Vocabulary	43	62.53	13.63	1.4	2.8	13
Reading Comprehension	43	7.23	4.25	1.7	2.8	15
Math Computation	43	26.44	8.06	1.7	2.8	16
Math Concepts	43	30.79	6.06	1.8	2.8	22
Language Auding	43	10.83	2.17	2.3	2.8	58
Language Mechanics	43	16.48	7.66	1.9	2.8	23
Language Usage	43	9.16	2.94	1.1	2.8	13
Spelling	43	5.86	3.87	1.4	2.8	1'
TOTAL BATTERY	43	166.80	44.61	1.6	2.8	12

Table 4. Group I, Grade 3

Self-Concept Inventory

Date Given	No.	Mean Raw Score	S.D.	Range
April 1973	44	17.09	1.33	12-18
April 1972	44	16.60	1.11	9-18

Table 5. Group I, Grade 3

Social Rating Scale

Subscale	Date	No.	Mean*	S.D.	Average Score For Test
Social Behavior	April 1973	34**	14.41	4.02	15.00
	April 1972	44	14.15	4.00	15.00
Emotional	April 1973	34	19.62	6.17	21.00
	April 1972	44	18.75	6.00	21.00
Intellectual Behavior	April 1973	34	18.91	6.40	18.00
	April 1972	44	17.84	6.57	18.00
Physical Status and Motor Behavior	April 1973	34	6.32	4.35	9.00
	April 1972	44	6.22	3.06	9.00
Adjustment to Classroom	April 1973	34	28.29	10.26	33.00
	April 1972	44	30.90	10.10	33.00

*Students were rated on a 1 to 5 scale (1=desirable behavior; therefore a lower than average score represents better than average behavior).
**Teachers did not return all Social Rating Scales.

Summary of Data Obtained on Group I

The follow-up test results for Group I children indicate the Mean IQ scores of 92.50 and 94.31 for these children was within the "normal" or "average" range on the Slosson Intelligence Test in 1972 and 1973. The forty-four children tested each year were not the same children. Some children located in 1972 could not be located in 1973 and some located in 1973 had not been located in 1972. Results for these children on the Peabody Picture Vocabulary Test indicate their Mean IQ scores of 84.3 and 76.6 is below the national average for the test.

Results on the California Achievement Test in April 1973 indicated these children are below grade level on each subtest and their mean scores were below the 20%ile on all subtests. Comparison of April 1972 and April 1973 California Achievement Test scores indicate the children increased their grade equivalent on each subtest. They made a gain of five months in Reading Vocabulary, seven months in Reading Comprehension, one year in Math Computation and nine months in Lauguage Usage. Results would indicate that satisfactory progress was made in Reading Comprehension, Math Computation, and Language Usage and less satisfactory progress was made in Reading Vocabulary (satisfactory progress is defined as approximately 1.0 grade equivalent gain from one year to another).

The Self-Concept Inventory indicates these children as a group answered 17.09 items on an 18 item inventory in a positive way. Results for 1972 and 1973 indicate these children have positive self-concept. National norms for this test have not been established.

Results on the Social Rating Scale indicate these children are rated as being higher than average in social behavior, emotional behavior, physical status and motor development, and adjustment to classroom procedures. Their intellectual behavior was rated about average each year.

Group II, Grade 2 Test Results

Group II, Grade 2 entered the Central Cities Early Childhood Program in 1968 at the age of three. They completed three years in preschool prior to entry into first grade in 1971. Results of tests given in September 1971 at the beginning of the first grade are given in Table 6. Scores obtained by their classmates are also given for comparison.

Table 6. Group II, Grade 2

Metropolitan Readiness Test

Group	No.	Total Mean Score	S.D.	Nat'l Norm
Central Cities	45	56.40*	17	Average**
Comparison	434	46.59	19	Average**

*Difference between the groups is significant at the .05 level.
**A total score from 45-63 is considered average: the %ile rank is stated as above the 30 and below the 70th.

Results obtained on the Slosson Intelligence Test, Peabody Picture Vocabulary Test, Self-Concept Inventory, California Achievement and Social Rating Scale in April 1972 and April 1973 are given in Tables 7 through 11.

Table 7. Group II, Grade 2

Mental Maturity Test Results for 1972 and 1973

Test	No.	1972 Mean IQ	S.D.	No.	1973 Mean IQ	S.D.
Slosson Intelligence Test	44	99.90	12.72	44	96.39	12.01
Peabody Picture Vocabulary Test (Form A--1972 Form B--1973)	44	88.22	8.31	44	84.57	11.71

Table 8. Group II, Grade 2

California Achievement Test, Level 1, Form A

Subtest	No.	April 1973 Raw Score Mean	S.D.	Test Grade Equivalent	Actual Grade Placement	National %ile
Reading Vocabulary	45	65.11	14.42	1.6	2.8	16
Reading Comprehension	45	8.13	5.04	1.8	2.8	20
Math Computation	45	24.73	11.43	1.7	2.8	14
Language Auding	45	10.82	2.84	2.3	2.8	43
Language Usage	45	10.31	3.90	1.3	2.8	14

Table 9. Group II, Grade 2

California Achievement Test, Level 1, Form A

Subtest	No.	April 1972 Raw Score Mean	S.D.	Test Grade Equivalent	Actual Grade Placement	National %ile
Reading Vocabulary	48	52.90	11.94	0.7	1.8	20
Math Computation	48	16.70	9.31	1.1	1.8	30
Math Concepts	48	20.10	10.03	0.8	1.8	19
Language Auding	48	9.27	3.52	1.7	1.8	49

Table 10. Group II, Grade 2

Self-Concept Inventory

Date	No.	Mean Raw Score	S.D.	Range
April 1973	44	16.98	1.11	12-18
April 1972	44	16.31	1.12	13-18

Table 11. Group II, Grade 2

Social Rating Scale

Subscale	Date	No.	Mean*	S.D.	Average Score for Scale
Social Behavior	April 1973 April 1972	36 44	13.25 14.18	5.17 5.00	15.00 15.00
Emotional Behavior	April 1973 April 1972	36 44	18.28 18.20	5.73 5.72	21.00 21.00
Intellectual Abilities	April 1973 April 1972	36 44	17.94 16.70	6.57 6.60	18.00 18.00
Physical Status and Motor Behavior	April 1973 April 1972	36 44	6.72 6.77	3.06 3.04	9.00 9.00
Adjustment to Classroom	April 1973 April 1972	36 44	26.08 30.36	10.10 9.12	33.00 33.00

*Lower than age scores indicate desirable traits.

Summary of Data Obtained on Group II

Upon entry into first grade the children in Group II, who had three years of preschool, demonstrated a high degree of readiness for first grade work on the Metropolitan Readiness Test. Their total score on the Metropolitan Readiness Test was significantly higher than their classmates. At the end of first

grade in April 1972 their IQ score was midpoint of the average range on the Slosson Intelligence Test and below average on the Peabody Picture Vocabulary Test. In April 1973 their scores on the Slosson and Peabody dropped slightly, but the difference was not significant.

Results on the 1972 California Achievement Test indicate these children are from seven months to one year one month below grade level on all subtests, except Language Auding, where they are only one month below grade level. At the end of second grade in 1973, their scores on the California indicate they are still from five months to one year two months below grade level. During the 1972-1973 school year the students made a gain of one year one month on the Reading Vocabulary subtest, a gain of nine months in Math Computation and a gain of six months in Language Auding.

Results from the Self-Concept Inventory indicate that most of these children tend to have a high self-concept. Their mean score of 16.31 as first graders in 1972 is higher than the mean of 15.89, standard deviation of 1.70 found on a group of 69 first grade children in a Title I school in 1973. (Fort Worth Public School Title I Evaluation of Norm Center, 1973) Their score is also higher then the 1970-1971 score of 16.11 obtained on a group of 18 middle income first graders. (Central Cities Educational Development Center Evaluation Report, 1970-1971)

Group III, Grade 1 Test Results

Group III, Grade 1 children were enrolled in the Early Childhood Center at age three and stayed two years. Of the 43 children in this group, thirty-five were located in public school Kindergartens in 1972 and in first grade in April 1973. Test results for this group are given below.

Table 12. Group III, Grade 1

Metropolitan Readiness Test

Group	No.	Total Mean Score	SD	National Norm
Central Cities	32	45.9	16.4	33
Mean for all first grade children in the eleven schools where the Central Cities children are enrolled		40.4*	-	23

*Data obtained from Rank order list of school median score for first grade children on Metropolitan Readiness Test.

Table 13. Group III, Grade 1

Mental Maturity Test Scores

Test	No.	1972 Mean IQ	S.D.	No.	1973 Mean IQ	S.D.
Slosson Intelligence Test	34	102.82	10.88	35	99.3	10.6
Peabody Picture Vocabulary Test	33	86.81	13.05	35	86.3	14.3

Table 14. Group III, Grade 1

California Achievement Test

Subtest	No.	Mean Raw Score	S.D.	Mean Test Grade Equivalent	Actual Grade Placement	Nat'l %ile
Reading Vocabulary	42*	49.55	15.25	0.6	1.8	16
Math Computation	42	10.88	9.72	0.6	1.8	14
Language Auding	42	7.50	3.09	0.6	1.8	3

*This includes the five children in Group IV who had three years of Central Cities and two children who were not given individual IQ tests in 1973.

Table 15. Group III, Grade 1

Self-Concept Inventory

Date	No.	Mean Raw Score	S.D.	Range
April 1973	40*	16.73	1.75	9-18
April 1972	35*	16.28	1.62	14-18

*The five children in Group V are included.

Table 16. Group III, Grade 1

Social Rating Scale

Subtest	Date	No.	Mean Raw Score	S.D.	For Scale Average Score
Social Behavior	April 1973	30*	13.03	4.19	15.00
	April 1972	35*	13.37	4.20	15.00
Emotional Behavior	April 1973	30	17.83	5.94	21.00
	April 1972	35	17.54	5.80	21.00
Intellectual Abilities	April 1973	30	17.20	5.62	18.00
	April 1972	35	13.25	5.54	18.00
Physical Status and Motor Behavior	April 1973	30	6.80	2.98	9.00
	April 1972	35	6.51	2.85	9.00
Adjustment to Classroom	April 1973	30	26.07	9.10	33.00
	April 1972	35	25.27	9.10	33.00

*The five children in Group IV are included. Low group number indicates some teachers did not return rating scales.

Summary of Data Obtained on Group III

The mean Slosson Intelligence Test score for Group III is within the "average" or "normal" range for this test in 1972 and 1973. Their mean score on the Peabody Picture Vocabulary Test is below the average range. Their mean grade equivalent scores on all subtests of the California Achievement Test indicate they are one year and two months below their actual grade. Results on the Metropolitan Readiness Test indicate they ranked in the 33%ile national norm in readiness for first grade work at the beginning of the year; although they were similar to the first grade children in the schools they attended.

Results on the Social Rating Scale for 1972 and 1973 indicate these children were rated by their teachers as being higher than average in social behavior, emotional behavior, physical status and motor behavior and adjustment to classroom procedures. They were rated as average in intellectual abilities in 1973 but above average in 1972. The results of the Self-Concept Inventory indicate most of these children have adequate self-concept. Their self-concept scores on this instrument are higher than the mean score of 15.89, those obtained on the Title I first grade Black children and the mean score of 16.11 obtained by the author on middle-income Anglo children.

Group IV, Grade 1 Test Results

Group IV, Grade 1 consisted of 18 children who had entered the program at age 2. Of the 18 children, only five could be located in 1973. These children were placed in the same Early Childhood classes as those in Group III. Their test scores are reported separately as they had three years of Central Cities and one year of kindergarten before entry into grade 1. One child was not tested in 1972 as she was not in kindergarten.

Table 17. Group IV, Grade 1

Mental Maturity Test Scores

Test	No.	April 1972 Mean IQ	S.D.	No.	April 1973 Mean IQ	S.D.
Slosson Intelligence Test	4	108.50	4.20	5	101.80	9.39
Peabody Picture Vocabulary Test	4	85.00	11.80	5	90.20	6.00

Table 18. Group IV, Grade 1

California Achievement Test

Subtest	No.	Raw Score Mean	S.D.	Mean Test Grade Equivalent	Actual Grade Placement	National %ile
Reading Vocabulary	5	46.40	9.86	0.6	1.8	13
Math Computation	5	10.40	8.17	0.7	1.8	14
Language Auding	5	7.00	4.18	0.6	1.8	26

Table 19. Group IV, Grade 1

Self-Concept Inventory

Date	No.	Mean	S.D.
April 1973	5	17.40	0.55
April 1972	4	16.50	1.29

Table 20. Group IV, Grade 1

Social Rating Scale

Subtest	Date	No.	Mean	S.D.	Average Score
Social Behavior	April 1973 April 1972	4 4	11.75 12.50	5.18 3.11	15.00 15.00
Emotional Behavior	April 1973 April 1972	4 4	15.25 15.50	4.71 4.43	21.00 21.00
Intellectual Abilities	April 1973 April 1972	4 4	17.00 15.50	6.27 5.06	18.00 18.00
Physical Status and Motor Behavior	April 1973 April 1972	4 4	6.25 5.50	5.18 2.38	9.00 9.00
Adjustment to Classroom	April 1973 April 1972	4 4	24.25 21.50	9.12 8.58	33.00 33.00

Summary of Data Obtained on Group IV

As a group, the five children in this group who entered preschool at age two did not differ from the children in Group III who had entered Central Cities at age three.

Group V, Kindergarten Test Results

Group V, Kindergarten, entered the program at age 3 and spent one year in the Early Childhood Program before the program closed. Thirty-two of the children in this group were located in the Fort Worth Public Schools Four-Year-old Program that used the Early Childhood Curriculum developed under the Central Cities Program in 1972. Thirty of these children were found in public school kindergartens in 1973. Test results are given in the following tables.

Table 21. Group V, Kindergarten

Mental Maturity Test Results

Test	No.	1972 Mean IQ	S.D.	No.	1973 Mean IQ	S.D.
Slosson Intelligence Test	32	110.1	13.2	30	98.1	12.3
Peabody Picture Vocabulary Test	32	85.2	13.6	30	83.7	14.6

Table 22. Group V, Kindergarten

Self-Concept Inventory*

Date	No.	Mean Raw Score	S.D.	Range
April 1973	30	16.53	0.84	15-18

*This inventory was not given to these children in 1972.

Table 23. Group V, Kindergarten

Social Rating Scale

Subtest	Date	No.	Mean	S.D.	Average Score
Social Behavior	April 1973 April 1972	22 32	13.81 12.44	6.93 3.92	15.00 15.00
Emotional Behavior	April 1973 April 1972	22 32	17.77 15.31	5.59 3.67	21.00 21.00
Intellectual Abilities	April 1973 April 1972	22 32	16.90 14.62	7.09 4.85	18.00 18.00
Physical Status and Motor Behavior	April 1973 April 1972	22 32	6.86 6.62	3.01 2.63	9.00 9.00
Adjustment to Classroom	April 1973 April 1972	22 32	24.27 23.43	9.27 7.95	33.00 33.00

Summary of Data Obtained on Group V

The Slosson Intelligence Test results indicate these children are still within the normal range. Scores on the Peabody Picture Vocabulary Test indicate these children are still below average on this test. Group results on the Self-Concept Inventory are similar to results obtained on five-year-old children by middle-income Anglo and Black students. (Evaluation Report Early Childhood Curriculum Field Test 1971-1972). As a group, these children were rated above average in social behavior, emotional behavior, intellectual abilities, physical status and motor behavior, and adjustment to classroom procedures.

Group VI, Kindergarten Test Results

Group VI, Kindergarten entered the preschool program at age two and spent two years in the program. Seven of these nine children were enrolled in the school year 1971-1972 in the public school's four-year-old program that used the Early Childhood Curriculum developed under the Central Cities Program. Results for the seven children located in 1972 and nine located in 1973 are given in Tables 24 through 26.

Table 24. Group VI, Kindergarten

Mental Maturity Test Results for 1972 and 1973

Test	No.	Mean IQ May 1972	S.D.	No.	Mean IQ April 1973	S.D.
Slosson Intelligence Test	7	107.30	10.00	9	96.20	11.10
Peabody Picture Vocabulary Test	7	82.10	9.00	9	77.60	20.80

Table 25. Group VI

Self-Concept Inventory

Date	No.	Mean Raw Score	S.D.	Range
April 1973	9	14.60*	2.12	11-17

*Difference between Group V and Group VI (t=2.62) was significant at .02 level.

Table 26. Group VI

Social Rating Scale

Subtest	Date	No.	Mean	S.D.	Average Score
Social Behavior	April 1973	7	15.20	4.82	15.00
	April 1972	7	10.70	3.82	15.00
Emotional Behavior	April 1973	7	18.80	7.64	21.00
	April 1972	7	14.40	4.43	21.00
Intellectual Abilities	April 1973	7	14.70	4.82	18.00
	April 1972	7	13.70	3.40	18.00
Physical Status and Motor Behavior	April 1973	7	5.45	2.63	9.00
	April 1972	7	4.14	1.06	9.00
Adjustment to Classroom	April 1973	7	23.11	9.45	33.00
	April 1972	7	21.20	5.99	33.00

Summary of Data Obtained on Group VI

The seven children in this group did not differ on the mental maturity test from the other kindergarten children who had entered the program at age three. Their mean IQ scores are within the average range on the Slosson Intelligence Test but below average on the Peabody Picture Vocabulary Test.

Results of the Self-Concept indicate these children who entered at age two score significantly lower than the children who entered the program at age three. Group VI scores were not significantly different from Group V scores on any part of the Social Rating Scale.

Group VII, Prekindergarten Test Results

Group VII, Prekindergarten entered the Central Cities Early Childhood Program at age two in September, 1970. During the 1971-72 school year, these children were not in a public school program. In 1972-73 school year, nine of the 17 children from this group were located in the public schools' four year old program. Test results for 1973 are given in Tables 27 and 28. The Social Rating Scale was not obtained on these children.

Table 27. Group VII

Mental Maturity Test Scores

Test	No.	Mean IQ May 1972	S.D.	No.	Mean IQ April 1973	S.D.
Slosson Intelligence Test		not given	not given	9	100.14	7.22
Peabody Picture Vocabulary Test		not given	not given	9	70.44	10.63

Table 28. Group VII

Self-Concept Inventory

Date	No.	Mean Raw Score	S.D.	Range
April 1973	9	15.44	0.88	14-17

Summary of Data Obtained on Group VII

Data obtained on the nine children in Group VII indicate these children as a group score within the normal range on the Slosson Intelligence Test but are below the normal range on the Peabody Picture Vocabulary Test. Their low score on the Self-Concept Inventory Test is comparable to the mean score of 15.73 obtained on 219 four year old children enrolled in the Title I Four Year Old Program in May, 1973.

Longitudinal Results

The tables giving test results for the total group by grade level are important in looking at the group of children and their progress after the preschool years. Longitudinal charts showing what happened to groups of children during the years of preschool and after preschool are essential for drawing conclusions about the lasting effects of preschool education.

Only children with scores on Slosson and Peabody, at the beginning of preschool, end of preschool, one year and two or three years after preschool, were used in the longitudinal tables. Mean IQ scores are given for each key year and a "t" test was made to determine significant increases or decreases in scores. Results are given in Table 29.

Table 29. Group I

Longitudinal Test Results

Test	No.	Entry Mean IQ 1968	End of Preschool Mean IQ	One Year After Preschool Mean IQ 1971	Two Years After Preschool Mean IQ 1972	Three Years After Preschool Mean IQ 1973
Slosson	27	94.15*	104.33	97.63	95.11	92.85*
			t = 3.02 (P = 0.01)	t = 2.02 (P < 0.05)	t = 0.70 (N.S.)	t = 0.80 (N.S.)
Peabody	27	78.04**	not given	85.22	83.85	80.07**
			t = 1.79 (P < 0.20)		t = 0.46 (N.S.)	t = 1.46 (P < 0.20)

*t = 0.40 difference between 1968 and 1973 scores not significant
**t = 0.54 difference between 1968 and 1973 scores not significant

Table 30. Group II

Longitudinal Test Results

Test	No.	Entry Mean IQ 1968	End of Preschool Mean IQ 1971	One Year After Preschool Mean IQ 1972	Two Years After Preschool Mean IQ 1973
Slosson	26	95.19*	109.08	102.77	98.00**
			t = 3.03 (P < 0.01)	t = 1.59 (P < 0.20)	t = 1.33 (P < 0.20)
Peabody	32	56.53**	87.03	88.41	86.13**
			t = 5.00 (P = 0.001)	t = 0.50 (N.S.)	t = 0.86 (N.S.)

*t = 0.66 difference between 1968 and 1973 scores not significant
**t = 4.87 difference between 1968 and 1973 scores significant at .001 level.

Table 31. Group III

Longitudinal Test Results

Test	No.	Entry Mean IQ 1969	Mean IQ	End of Preschool Mean IQ 1971	One Year After Preschool Mean IQ 1972	Two Years After Preschool Mean IQ 1973
Slosson	26	100.73*	not given	108.73	102.19	98.76*
		t = 2.19 (P < 0.05)		t = 1.92 (P < 0.10)	t = 1.06 (N.S.)	
Peabody	22	not given	83.77**	80.13	87.45	85.09**
		t = 0.72 (N.S.)		t = 1.71 (P = 0.10)	t = 0.55 (N.S.)	

*t = 0.56 difference between 1969 and 1973 scores not significant
**t = 0.26 difference between 1970 and 1973 scores not significant

Table 32. Group IV

Longitudinal Test Results

Test	No.	Entry Mean IQ 1968	Mean IQ	End of Preschool Mean IQ 1971	One Year After Preschool Mean IQ 1972	Two Years After Preschool Mean IQ 1973
Slosson	3	87.66*	not given	114.00	108.00	98.66*
			t = 3.01 (P = 0.10)		t = 0.65 (N.S.)	
Peabody	4	not given	86.25**	83.50	85.00	91.50**
			t = 0.40 (N.S.)		t = 0.98 (N.S.)	

* t = 1.87 difference between 1968 and 1973 scores significant at 0.20 level
** t = 0.92 difference between 1970 and 1973 scores not significant

Table 33. Group V

Longitudinal Test Results

Test	No.	Entry Mean IQ 1970	End of Preschool	One Year After Preschool 1972	Two Years After Preschool 1973
Slosson	17	95.58*	106.88	110.11	98.90*
			t = 2.10 (P = .05)	t = 0.71 (N.S.)	t = 2.55 (P = .05)
Peabody	14	68.50**	69.85	84.64	86.80**
			t = 0.41 (N.S.)	t = 3.13 (P = 0.01)	t = 0.35 (N.S.)

* t = 0.62 difference between 1970 and 1973 scores not significant
** t = 3.67 difference between 1970 and 1973 scores significant at 0.01 level

Table 34. Group VI

Longitudinal Test Results

Test	No.	Entry Mean IQ 1969	Mean IQ	End of Preschool Mean IQ 1971	One Year After Preschool	Two Years After Preschool Mean IQ
Slosson	7	99.85*	t = 1.30 (N.S.)	105.71	t = 0.42 (N.S.) 103.85	94.11*
Peabody	4	not given	79.50	79.50	t = 0.35 (N.S.) 82.75	79.50

Table 35. Group VII

Longitudinal Test Results

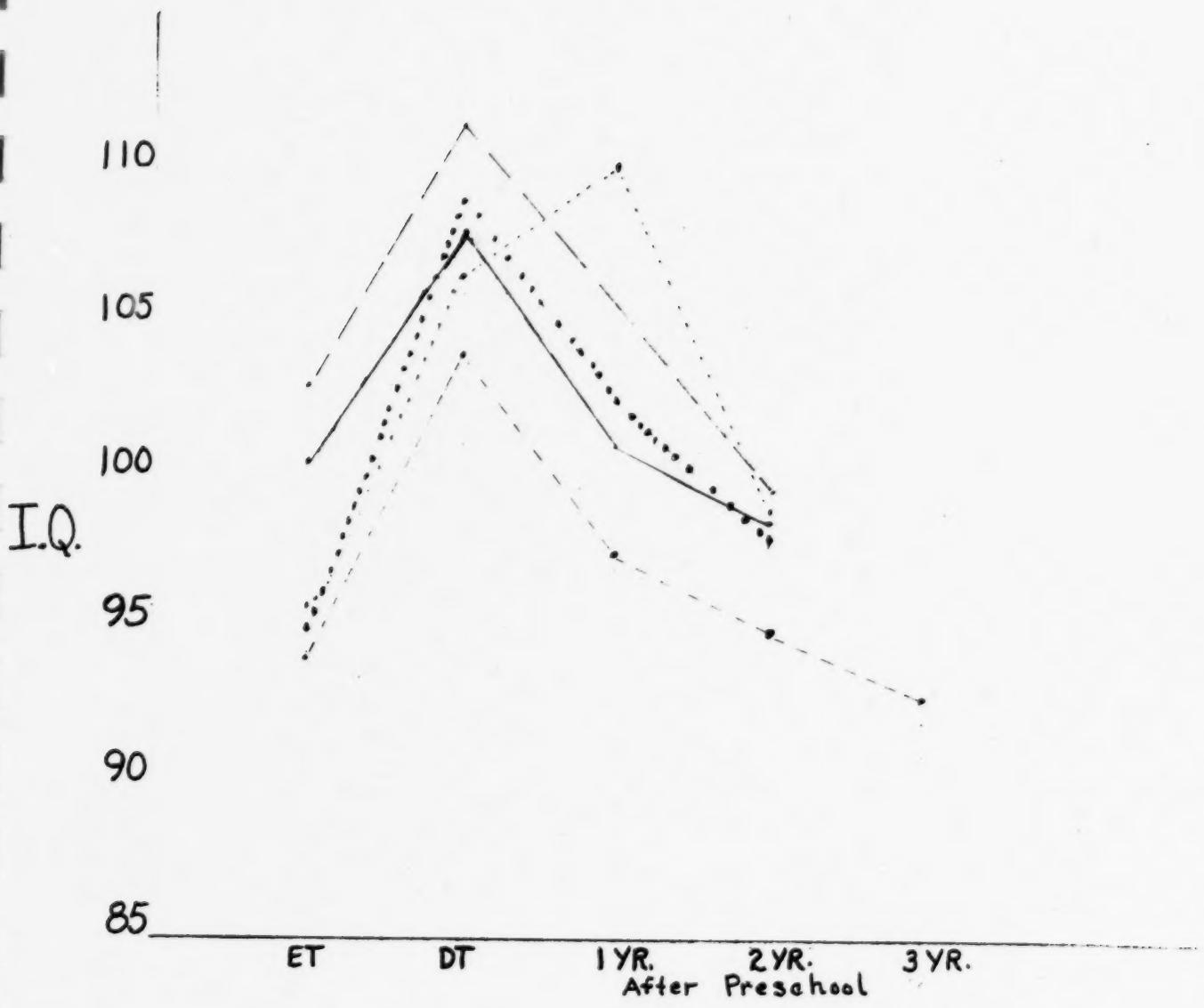
Test	No.	Entry Mean IQ 1970	End of Preschool Mean IQ 1971	Two Years After Preschool 1973
Slosson	7	103.28*	t = 0.93 (N.S.) 11.55	t = 2.13 99.66*
Peabody	9	not given	not given	70.44

* t = 0.47 difference between 1970 and 1973 test results not significant

A graph showing longitudinal test results for all groups on the Slosson are given in Graph 1 to show similarities and differences between groups, with one, two and three years of intervention. Graph 2 shows longitudinal test results obtained on the Peabody for those groups with entry tests, departure tests, and after-preschool test scores. Graphs 3 and 4 give test results for Groups III and IV as these groups are the same age, the difference being one of age at the beginning of preschool and length of preschool. Group IV began Central Cities at age 3 and stayed two years whereas Group IV began at age two and stayed three years. Graphs 5 and 6 show the results of two groups of the same age who had begun Central Cities at different ages and had different lengths of preschool. Group V had begun at age 3 and stayed one year, Group VI began at age 2 and stayed two years.

GRAPH 1

SLOSSON INTELLIGENCE TEST



- - - - Group I 2 years Central Cities
•••••• Group II 3 years Central Cities
——— Group III 2 years Central Cities PLUS 1 year Kindergarten
····· Group V 1 year Central Cities PLUS 1 year Four-Year-Old Program AND 1 year Kindergarten
— — Group VII 1 year Central Cities, 1 year out of school, and 1 year Four-Year-Old Program

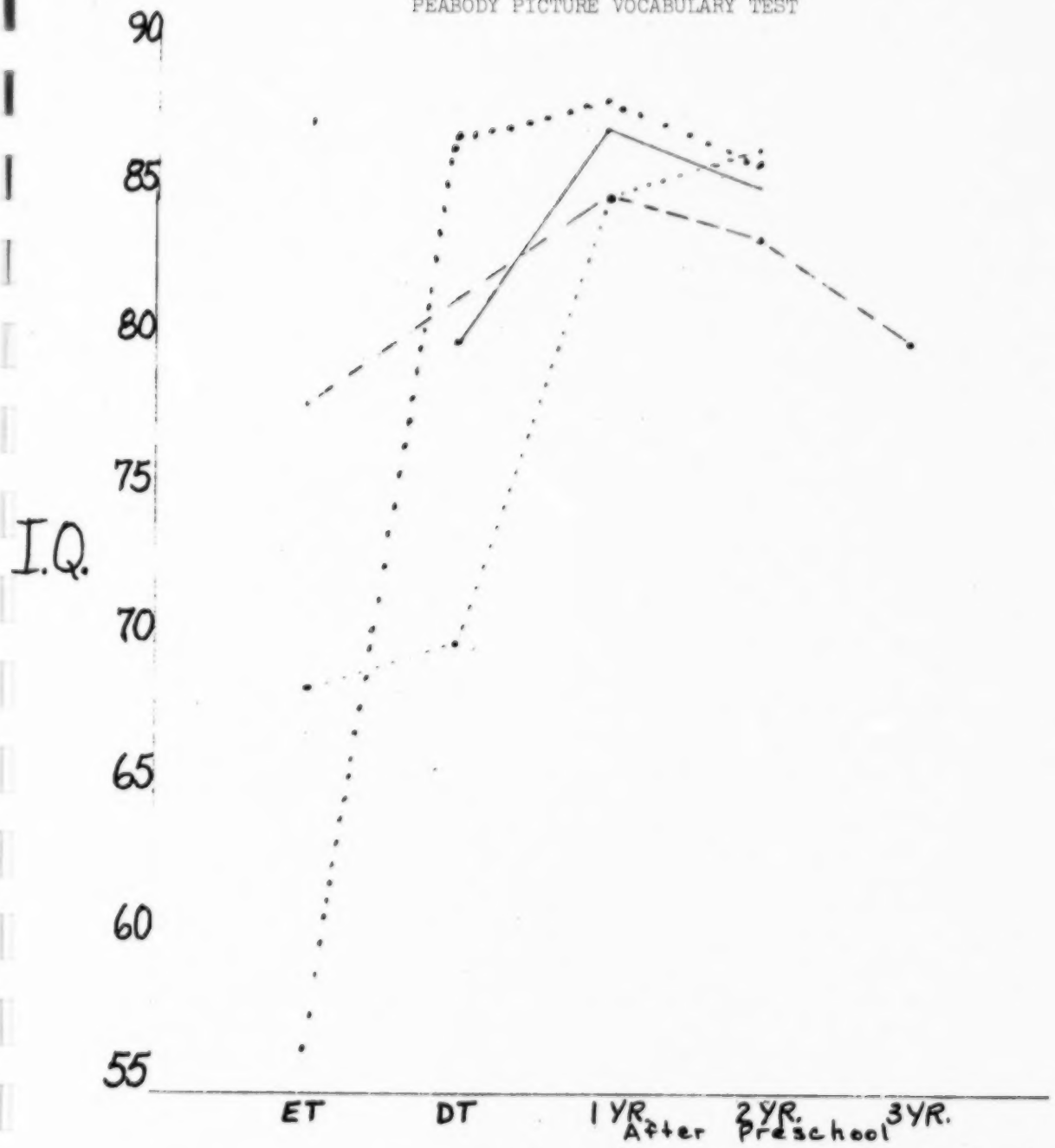
ET Entry Test into Central Cities
DT Departure Test from Central Cities

Graph 1 dramatically illustrates mean increases in IQ scores for all groups on the Slosson during the preschool years, regardless of length of time in preschool or age at entry. One year after departure from preschool, all groups showed a mean decrease in IQ scores, except Group V. Group V, after 1 year of Central Cities preschool, entered the four-year-old program that used the Level 4 Early Childhood curriculum that was developed under the Central Cities project.

All other groups show a mean decrease in scores regardless of how they spent their first year after the Central Cities program. Groups I and II entered first grade, Group III entered Kindergarten, and Group VII stayed home. Two or three years after preschool, scores for all groups were not significantly different from their entry scores.

GRAPH 2

PEABODY PICTURE VOCABULARY TEST



— — — Group I Test not given at end of Central Cities--spent 2 years in Central Cities Program

•••••• Group II 3 years in Central Cities

——— Group III Test not given on entry--Departure Test score at end of 2 years in Central Cities

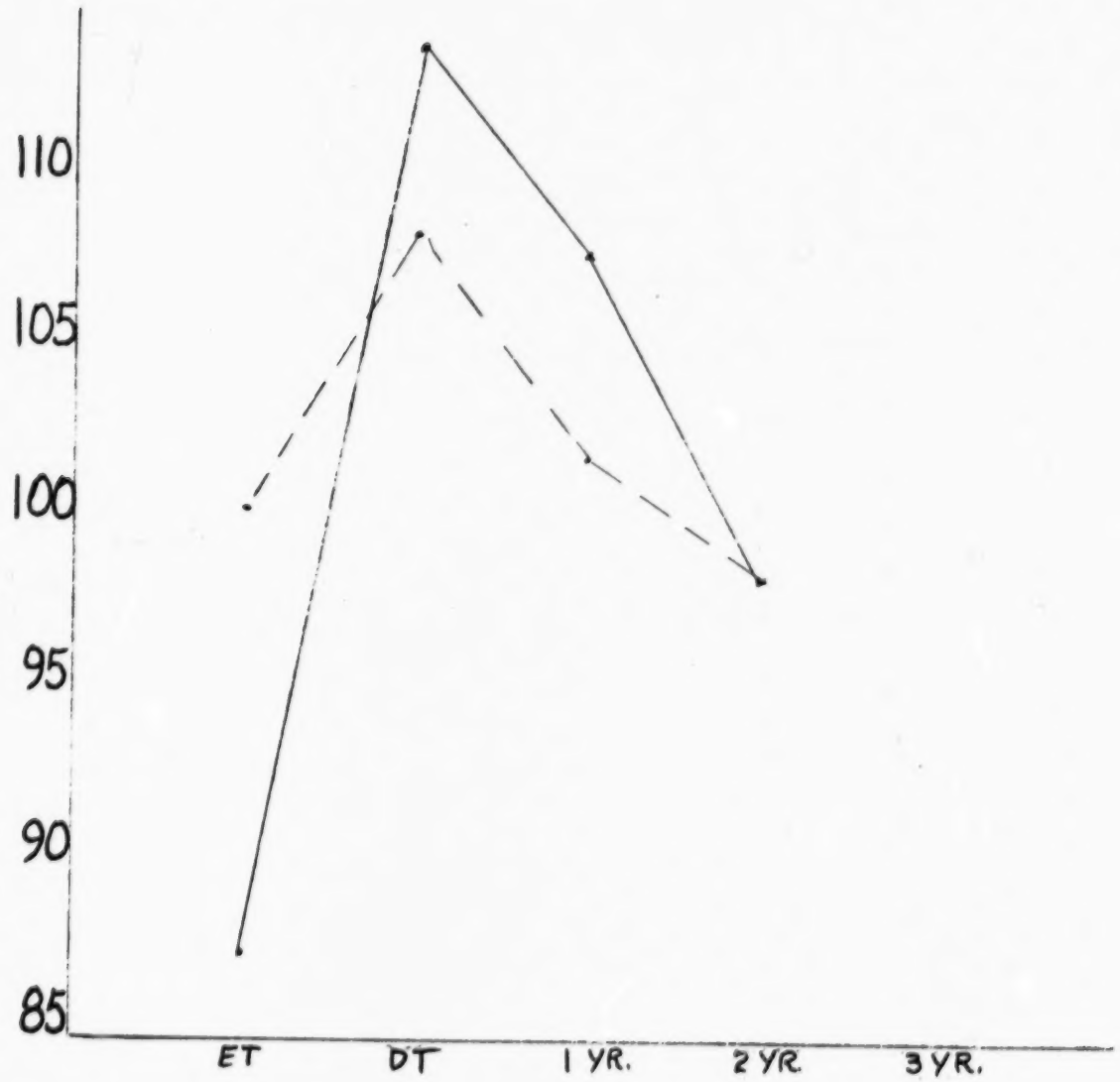
····· Group V Departure Test is end of 1 year in Central Cities

Graph 2 which gives the Peabody Picture Vocabulary Test results for the four groups indicates that Group II who spent three years in the program increased their scores significantly during their time in preschool. The other group, Group V, on whom pretest and post-test data were obtained, did not significantly increase their score on this test during their one year in preschool.

One year after preschool intervention all groups tended to increase their scores on this test, but the increases were only significant for Group V who entered the four year old program that used the curriculum developed under the Central Cities program. Two years after the program only Groups II and V scored significantly higher on this test than when they entered the preschool. Group III had not been given the test upon entry but were tested one year after entry into the preschool program, therefore, increases in vocabulary development due to the Central Cities program had probably taken place.

GRAPH 3

SLOSSON INTELLIGENCE TEST



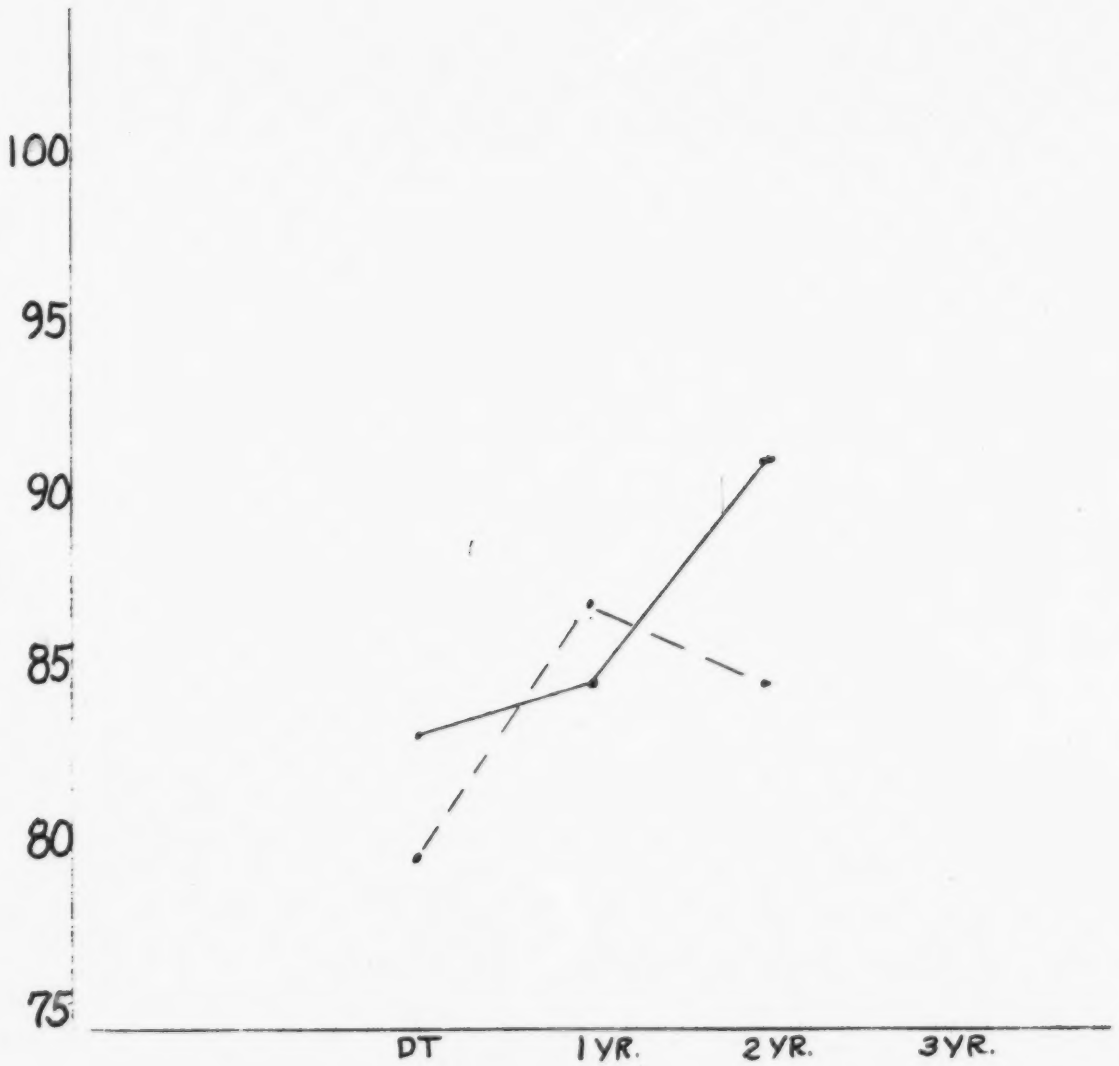
— — Group III Entered Central Cities at age 3 for 2 years

——— Group IV Entered Central Cities at age 2 for 3 years

Graph 3 shows the difference in Slosson test scores of children who entered the program at age two, Group IV, versus those who entered at age three, Group III. Group IV made greater gains during their three years in the program than Group IV during their two years, although both groups significantly increased their scores. Two years after Central Cities preschool, both groups tended to make similar scores on this test. The difference between their entry scores and scores two years after preschool are significant at the 0.20 level for Group IV, although the difference for Group III was not significant.

GRAPH 4

PEABODY PICTURE VOCABULARY TEST



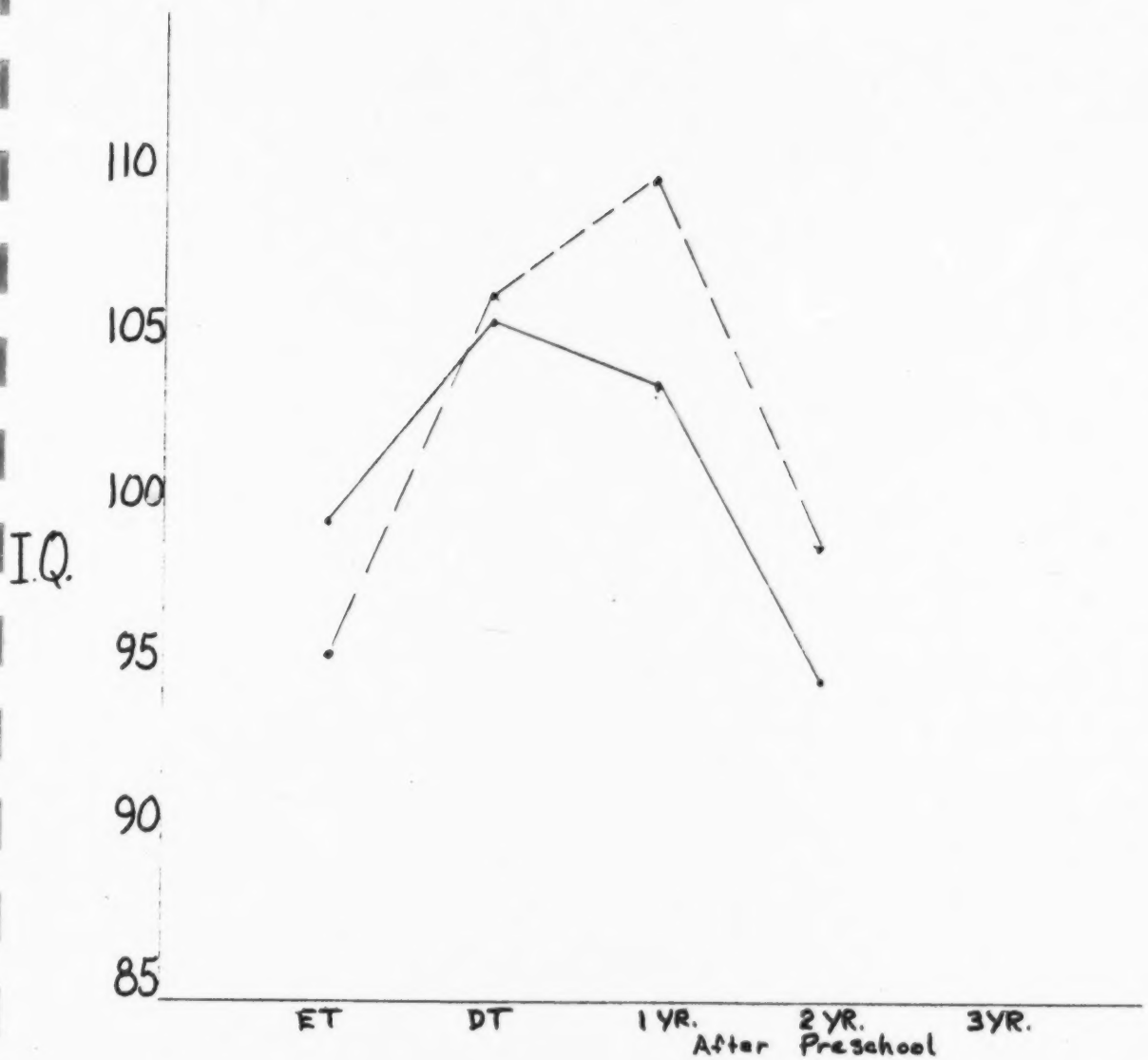
— — Group III Entered Central Cities at age 3 for 2 years--no Entry Test scores obtained

——— Group IV Entered Central Cities at age 2 for 3 years

Graph 4 gives test results from the Peabody Picture Vocabulary Test for Groups III and IV. Since entry scores on this test were not obtained, departure test scores are given for both groups. At departure from preschool, Group IV, who had 3 years of preschool, scored slightly higher than Group III on the Peabody. One year after preschool the two groups mean scores are similar with Group III scoring slightly higher. Two years after Central Cities preschool Group IV who had three years of preschool are slightly higher than Group III who had only two years of Central Cities.

GRAPH 5

SLOSSON INTELLIGENCE TEST



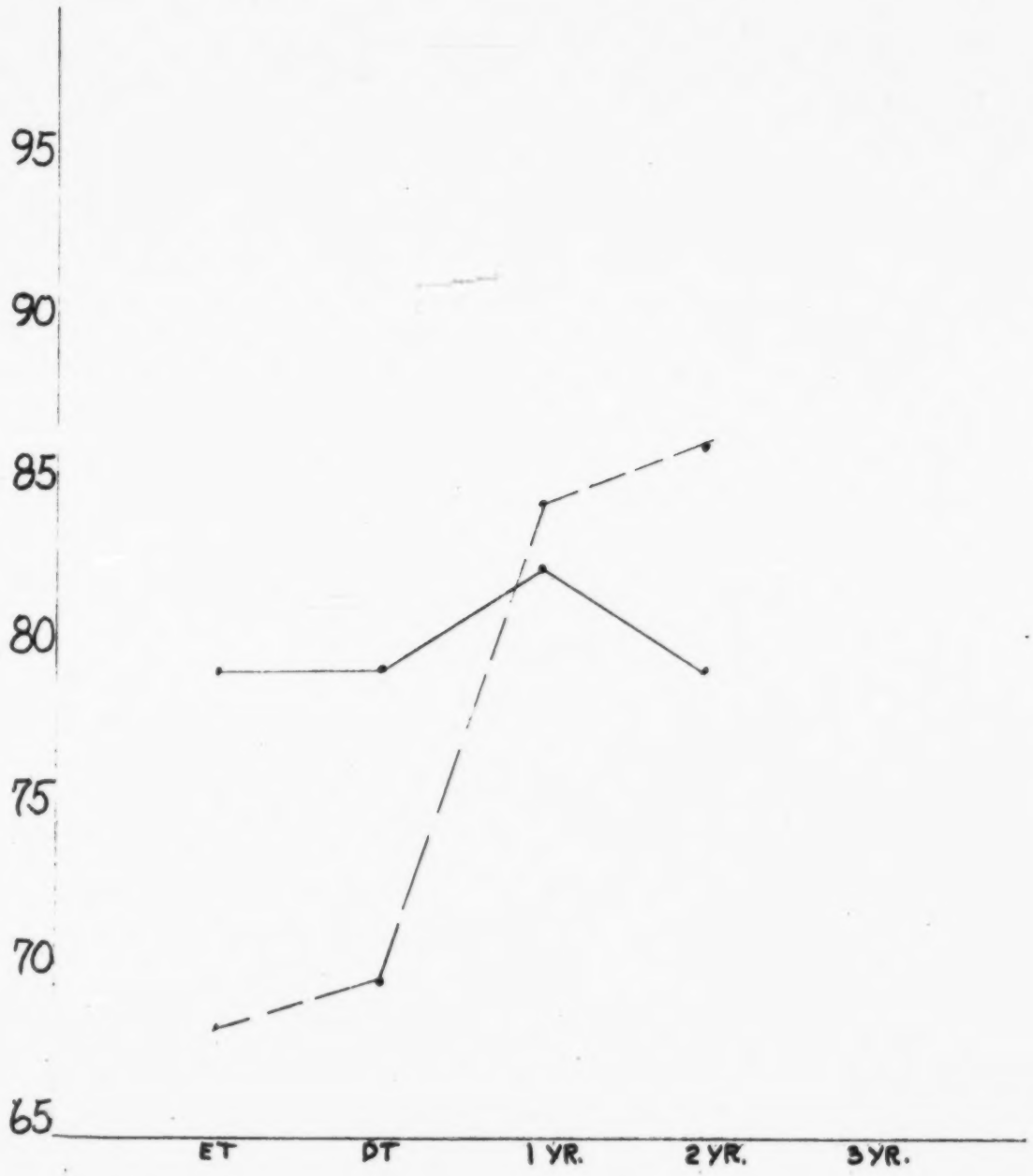
— — Group V Entered Central Cities at age 3 for 1 year

——— Group VI Entered Central Cities at age 2 for 2 years

Graph 5 shows the effect of two years of preschool, beginning at age two, Group VI, vs. one year beginning at age 3, Group V, on the Slosson Intelligence Test scores. Both groups made gains during their years in the Central Cities program. One year after the program, Group V continued to increase their scores on this test, but Group VI show a slight decrease. Two years after preschool both groups' mean score on this test are not significantly different from their entry test score.

GRAPH 6

PEABODY PICTURE VOCABULARY TEST



— — Group V Entered at age 3 for 1 year

——— Group VI Entry Test was given 1 year after entry as this group entered at age 2 and this test is not for 2 year old children.

Graph 6 shows the effect of two years of preschool beginning at age 2 vs. one year beginning at age 3 on the Peabody Picture Vocabulary Test results. The Peabody was not given to Group VI upon entry as the test is not appropriate for a two year old child. Therefore, scores labeled as entry scores for Group VI were after one year of preschool. Results indicate that Group V significantly increased their scores on this test one year after Central Cities preschool whereas Group VI increased their scores but the difference was not significant. Two years after Central Cities preschool, Group V scored significantly higher on the Peabody than they had on entry into preschool.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Objective 1: The first objective of this study was to determine the long range effectiveness of cognitive and affective development of one, two and three years of the Central Cities Early Childhood Education Program.

Results of this study, like many others on early childhood education, indicate the premise that early childhood education can alleviate the educational, social-emotional and physical problems of disadvantaged children by providing preschool experiences for one, two or three years is unrealistic. Significant score increases in cognitive, language, social, physical and motor development are achieved with the disadvantaged children in this study while they were in the Central Cities Early Childhood Education Program. When the children left the program and entered first grade or a regular public school kindergarten, I.Q. gains achieved on the Slosson test decreased. Two years after the Central Cities Early Childhood Education Program, the children's scores on this test were not significantly different from their scores upon entry into the program. Only one group maintained gains the first year after leaving the Central Cities Early Childhood Education Program, and that group was placed into a program for four year old children that used the Central Cities Early Childhood Education curriculum. Therefore, one may speculate that if an intervention program similar to the one provided in preschool had been continued, the mean I.Q. score decrease on this test would not have resulted. This group also showed the same kind of I.Q. score loss when placed in a regular public school kindergarten the following years.

One group of children made a significant gain of 30 I.Q. points on the Peabody Picture Vocabulary Test during preschool. The other group on whom entry and departure scores were obtained did not make a significant score increase. But all groups the first year after attending the Central Cities Early Childhood Education preschool made mean I.Q. score gains on the Peabody Picture Vocabulary Test. All groups with two or three years of intervention not only maintained the score increases made on this test during their preschool years, but they continued to increase their mean Peabody I.Q. scores. Two of these seven groups scored significantly higher two years after preschool than they did upon entry into preschool. These results would indicate that the effects of two or three years of the Central Cities Early Childhood Education Program can provide lasting effects upon language vocabulary as measured by this test.

Group mean scores on the Self-Concept Inventory (for all but one group) would indicate most of these children have a positive self-concept although the range of scores would indicate there are some children within the group who indicate negative attitudes toward self and significant others. The one group who, as a group, indicated negative self-concepts was the group of nine children who entered the program at age two and continued for two years. Seven of these children entered the program for four year olds and the other two were not in preschool for the first year after the Central Cities Early Childhood Education Program. All nine were located in a public school kindergarten two years after the Central Cities Program. Their low self-concept scores might indicate a negative effect produced by an all-day educational program for very young children. However, a similar effect was not evident for the other two groups who entered the preschool program at the age of two.

All groups of children included in this study were rated higher than peer average in social behavior, emotional behavior, physical status, motor development, and adjustment to classroom procedures. Therefore, the long term effectiveness of the Central Cities Early Childhood Education Program on these factors are most evident when teachers rate children in comparison to their own values system or norms for children these ages.

The group of children who left the Central Cities Early Childhood Education Program after three years and went directly into first grade demonstrated a high degree of readiness for first grade work on entry into first grade. Achievement test scores at the end of first grade indicated they were not performing as well as predicted. The children in this study come from a high poverty area of Fort Worth. After their three years of preschool at Central Cities they were thrust into neighborhood public schools with educationally disadvantaged children who had had little or no formal preschool experience. Many had not even attended a half-day kindergarten program, as kindergarten attendance is not required. Therefore, the performance of the Central Cities children at the end of the school year could indicate a failure of the elementary school program to continue building upon the foundation of skills laid in preschool. Since the majority of their class members lacked readiness skills, perhaps many of the first grade teachers concentrated on providing such skills for the majority and failed to provide more advanced learning skills for those with a higher level of school readiness.

At the end of second grade these children made satisfactory gains, that is approximately a year's gain in grade equivalency scores, from Spring 1972 to Spring 1973. This could be an indication of the continuous progress approach initiated by the school system during the past year, or it could be that the standardized achievement test given to first grade children was so hard for the children that it failed to provide an adequate measure of their true achievement.

This investigator feels that the use of national percentile norms as the criterion for judging the success of the achievement test scores for these children is unrealistic. These children were not a so-called "normal" group of children. They came from disadvantaged homes in disadvantaged neighborhoods. They were the children for whom parents, school and society have consistently failed to provide adequate food, shelter, and education. They were doomed to school failure if left without any preschool intervention. Of the 177 children included in this study, only two had been placed in special education classes. Two children had been retained for two years in the same grade. One of these was retained because of poor attendance. Therefore, one can only speculate

where these children would be without their preschool experiences. The fact that as a group they scored within the "normal" range on an I.Q. test several years following their Central Cities Early Childhood Education experiences, and all made satisfactory progress in school is within itself a strong endorsement for preschool education. The fact that Central Cities children come to first grade "ready" for that level of work, but by the year's end were not achieving as predicted, means that continuous stimulation is needed beyond the early childhood years. In other words perhaps three years of preschool is not enough foundation to sustain a child through the primary grades at a level competitive with middle class children.

Objective 2: Objective two proposes to answer the question of "how long preschool intervention must be continued to alleviate the special problems of disadvantaged children".

This research, like many others, hypothesized that preschool education could alleviate the special problems of disadvantaged children and sustain them through elementary school. Results would indicate that two or three years of continuous preschool intervention does provide disadvantaged children with the social, emotional, cognitive, physical and motor development needed for first grade success. Longitudinal results indicate that preschool gains in cognitive skills are more evident two years after preschool in children with three years of continuous Central Cities Early Childhood Education prior to entry into first grade than children with only two years of preschool experience.

Objective 3: Objective three proposed to determine the optimum age to begin preschool intervention. Results of the research on children who had entered the program at age two does not provide adequate data for drawing any valid conclusion about age two intervention. The children who began at age two in the Central Cities program did not have continuous intervention of the same type program until first grade as the Central Cities project closed when the first group of age two children entered public school kindergarten.

There was a tendency for children with age two intervention to score higher on the Slosson I.Q. test one year after intervention than children who entered at age three. This difference was washed out two years after intervention. The two year old intervention group increased their I.Q. scores on the Peabody two years after intervention whereas the group who entered at age three decreased their scores on this test. There was no difference in the achievement of those who entered at age two or three at the end of grade one.

Another group that entered at age two had only two years of the Central Cities program before it closed in 1971. As a group they scored lower on both intelligence tests than a group who entered at age three. Their self-concept scores were significantly lower than their peers who entered at age three.

Summary of Conclusions

1. Early childhood education can be successful in bringing disadvantaged children to an adequate level of first grade readiness, but when placed in schools and classrooms of educationally disadvantaged children, a majority of whom have not had similar experiences, they do not achieve as well as expected. This may be due to:

a. the possibility that the teacher's program will be adapted to meet the learning needs of the majority and will thus consist of readiness skills already acquired by the few who have had preschool;
b. the fact that the stimulating environment of the Early Childhood Education Program is no longer present to provide impetus for learning gains and the child hasn't an adequate foundation to overcome the stifling effects of a disadvantaged home and the traditional classroom;

2. Children with three years of continuous intervention before entering the first grade progressed more satisfactorily and retained gains longer than children having one or two years of intervention. Children who had a continuous Early Childhood Education Program did better than those who had one or two years of the program and then another kind of preschool experience before first grade. One group having one year of intervention followed by a program based on the Central Cities model progressed much better than a group who reentered a different type of program. From this we conclude:
   a. Intervention at age three is more beneficial than later intervention, providing intervention is sustained until first grade,
   b. Within the scope of this study three years of intervention beginning at age three represents the program promising maximum results. Indications are that earlier continuous intervention would be even better but data are insufficient to support this conclusion.
   c. Children need a program of continuous intervention until first grade, preferably a program with common elements and structure at each age level, for maximum benefits. Children enrolled in first one and then another preschool program, even though continuously, didn't do as well as those who had the continuity of a single program. The benefit of such continuity was lost even for those who stayed home a year and then reentered.
3. A Central Cities Early Childhood Education Program alone is not sufficient to sustain the disadvantaged child's progress during primary years. He lacks sufficient foundation to continue to make the kind of gains that would help him catch up to middle class norms without the stimulating environment of the enriched program. Some of his gain is probably lost by being put into class with other disadvantaged children at a lesser level of school readiness. This suggests:
   a. that school systems need to adapt their primary programs in the direction of providing supportive experiences for those who have early childhood education. They need to move on from where they are without waiting for others to catch up, and they need a continuance of vital program elements in the Early Childhood Education Program during primary years.
   b. that one way to offset regression of the disadvantaged child after an intervention program is to place him at a more challenging level rather than with peers who are in general less ready for school experiences. Many of these children might have fared better if they had been enrolled in a middle class first grade.

4. The children from the Central Cities Early Childhood Education Program are rated by their teachers two years after the program as better than peer average in social, emotional, motor and physical development and in their adjustment to classroom procedures. This seems to be due to:
    a. emphasis of the Early Childhood Education curriculum on motor skills;
    b. the total program emphasis on nutrition and the outstanding health program provided during the preschool years;
    c. the consistent and outstanding care provided during the early years of these children's lives help in their social-emotional development.

Recommendations

The results of this research indicate the Central Cities Early Childhood Program was successful in producing some permanent cognitive development as these disadvantaged children have maintained I.Q. scores within the average range on the Slosson Intelligence Test. Their I.Q. scores on this test were similar to the scores they made when they entered at ages two, three or four. Research studies by Bagley (1967) and Pasamanick and Knoblock (1961) on disadvantaged children indicate that at early ages, black disadvantaged children will score within or near the normal range on an intelligence test, but they tend to score lower than the normal as they proceed into elementary school and by third grade Kennedy et al (1963) found the average I.Q. of black children has stabilized at a mean I.Q. of 81. Standardized test reports of the Fort Worth Independent School District indicate that the mean I.Q. of black children tends to lie in the 80 to 85 range. Therefore, if the Central Cities Early Childhood Education Program helped children to stabilize their I.Q. scores at the preschool level, the program may be judged successful in partially meeting the cognitive needs of children.

Results of the Peabody Picture Vocabulary Test indicated that a sufficient background of skills was provided during preschool to help children continue to increase in vocabulary development.

Social ratings would indicate the program has been successful in producing long-term achievement in social, emotional, motor, and physical development. Also, their adjustment to regular school classrooms is better than average. Therefore, the investigator makes the following recommendations:

1. That the Central Cities Early Childhood Education model be provided for disadvantaged children from age three until entry into first grade.
2. That future programs using this model consider placing children, after their three years of preschool, into first grade classes with middle class children rather than educationally deprived children.
3. That a comparison group of children from deprived schools be used for achievement test comparison rather than use of national test norms.

APPENDIX

TESTS USED AND PURPOSE OF EACH TEST

Slosson Intelligence Test (SIT) for Children and Adults
by Richard L. Slosson

This instrument was used to measure the cognitive development of the children and to determine if they have maintained the intelligence test score gains made during their preschool years at Central Cities.

Peabody Picture Vocabulary Test
by Lloyd M. Dunn, Ph.D.

This instrument was used to measure the children's vocabulary development and to see if these children were able to maintain the language I.Q. gains they had obtained during preschool years at Central Cities.

California Achievement Test

This instrument was used to determine if the children who were enrolled in the preschool program at Central Cities are achieving at the expected grade level.

Metropolitan Readiness Test

This instrument was used to determine if the preschool program has adequately prepared the children for first grade instructions as measured by this test.

Social Rating Scale
Items adopted from Medinness First Grade Adjustment Scale

This instrument was used to assess the child's adjustment to classroom procedures, his teachers and his peers. The results of this scale will be used to determine the long-range effects of the preschool program on the affective development of the children.

Self-Concept Inventory--How I Feel About Myself
by Fae Lysiak

This inventory was used to determine how the child feels about himself and his relationship to others. It was used to measure the affective development of the children.

SELF-CONCEPT INVENTORY

"HOW I FEEL ABOUT MYSELF"

PURPOSE

This self-concept inventory is designed to measure a child's feelings about himself and his relationship with others. It has proven to be useful to counselors and psychologists in locating the specific problem areas of children ages five through nine. It is helpful to teachers in understanding a child's feelings about self, school and significant others. The children easily identify with the stick figure pictures used and enjoy showing the examiner which figure is like them.

INSTRUCTIONS FOR ADMINISTERING

The examiner should have the child seated at his left. Place the book "How I Feel about Myself" in front of the child so that the pictures are directly in front of the child. The scoring sheet should be placed at the examiner's right. Tell the child, "We are going to play a game. I am going to tell you about two boys/girls, and I want you to point to the one that is more like you." Open the book to the first page of pictures. The examiner points, with a pencil or his finger, to the picture on the left hand side of the page and reads the statement under the picture, then the examiner points to the picture on the right hand side of the page and reads the statement under the picture, then removes his finger or pencil and asks the question, "Which is more like you?" On the response sheet the examiner should mark "L" if the child points to the picture on the left side and "R" if the child points to the picture on the right side. Turn the page and repeat this procedure for each page of pictures.

TEST ITEMS

1. This boy/girl likes to come to school. — This boy/girl does not like to come to school.

Which is more like you?

2. This boy/girl is happy. — This boy/girl is not happy.

Which is more like you?

3. This boy/girl is sad. — This boy/girl is not sad.

Which is more like you?

4. This boy/girl has lots of friends. | This boy/girl does not have lots of friends.

Which is more like you?

5. This boy/girl is smart. | This boy/girl is not smart.

Which is more like you?

6. This boy/girl is shy. | This boy/girl is not shy.

Which is more like you?

7. This boy/girl is pretty. | This boy/girl is not pretty.

Which is more like you?

8. The other children do not like this boy/girl. | But they like this boy/girl.

Which is more like you?

9. This boy/girl is a lot of trouble to his/her mother. | This boy/girl is not a lot of trouble to his/her mother.

Which is more like you?

10. This boy/girl always does what the teacher tells him/her. | This boy/girl does not do what the teacher tells him/her.

Which is more like you?

11. This boy/girl is good at home. | This boy/girl is not good at home.

Which is more like you?

12. This boy/girl has lots of friends at school. | This boy/girl does not have lots of friends at school.

Which is more like you?

13. The teacher likes this boy/girl. | The teacher does not like this boy/girl.

Which is more like you?

14. This boy/girl is often afraid. This boy/girl is not often afraid.

Which is more like you?

15. This boy/girl does not like his/her brother (sister). This boy/girl likes his brother (sister).

Which is more like you?

16. The children in school tease and make fun of this boy/girl. They do not tease and make fun of this boy/girl.

Which is more like you?

17. This boy/girl does not let other children play with his/her toys. This boy/girl lets other children play with his/her toys.

Which is more like you?

18. This boy/girl likes to show and tell what he/she knows. This boy/girl does not like to show and tell what he/she knows.

Which is more like you?

Name_____ School_____

Date_____ Teacher_____

Total Social Rating_____

SOCIAL RATING SCALE

DIRECTIONS:

The terms at either end of each trait scale are to be considered as anchor points. The left end, "1", describes the positive or desirable aspect of a trait while the right end, "5", describes the negative or undesirable aspect of that trait. The center of each scale, "3", indicates the position in which the "average" child would be placed with regard to that trait. In making your decision concerning the rating to be given, freely compare the child with other children of his age level. Add the numbers circled under each section to obtain behavior rating for each section. Add all sections to obtain the child's total social rating.

I. SOCIAL BEHAVIOR (Relationship with other children)

A. Consideration for others

considerate 1 2 3 4 inconsiderate 5

B. Willingness to share or take turns

willing 1 2 3 4 unwilling 5

C. Outgoingness

open friendliness 1 2 3 4 shy, timid 5

D. Sense of fair play

strong 1 2 3 4 poor 5

E. Tendency to tattle

seldom 1 2 3 4 frequently 5

SOCIAL BEHAVIOR RATING_____

II. EMOTIONAL BEHAVIOR (Emotional maturity or control)

A. Reaction to praise

accepts 1 2 3 4 resents 5

C. Reaction to criticism

accepts 1 2 3 4 resents 5

D. Flexibility

flexible 1 2 3 4 inflexible 5

D. Reaction to lack of success

good 1 2 3 4 poor 5

E. Degree of tension

relaxed 1 2 3 4 nervous 5

F. Self-confidence

strong 1 2 3 4 poor 5

G. Sense of humor

good 1 2 3 4 poor 5

EMOTIONAL BEHAVIOR RATING _____

III. INTELLECTUAL ABILITIES AND BEHAVIOR

A. Creativity

creative 1 2 3 4 unimaginative 5

B. Curiosity

keenly curious 1 2 3 4 little 5

C. Speed of comprehension

quick 1 2 3 4 slow 5

D. Background knowledge and information

adequate 1 2 3 4 inadequate 5

E. Language development

mature				inmature
1	2	3	4	5

F. Evaluation of own abilities and achievement

good				poor
1	2	3	4	5

INTELLECTUAL BEHAVIOR RATING_____

IV. PHYSICAL STATUS AND MOTOR BEHAVIOR

A. Health

good				poor
1	2	3	4	5

B. Gross muscle coordination (as in running, throwing, etc.)

agile				awkard
1	2	3	4	5

C. Fine muscle coordination (as in drawing, writing, coloring)

good				poor
1	2	3	4	5

PHYSICAL BEHAVIOR RATING_____

V. ADJUSTMENT TO CLASSROOM

A. Ability to listen

attentive				fearful
1	2	3	4	5

B. Ability to follow directions

good				inattentive
1	2	3	4	5

C. Attitude toward work

acceptant				resentful
1	2	3	4	5

D. Work habits

thorough				careless
1	2	3	4	5

G. Interest in classroom activities

strong 1 2 3 4 none 5

H. Contribution to group discussion

worthwhile 1 2 3 4 little meaningful 5

I. Care of own supplies and equipment

careful 1 2 3 4 destructive 5

K. Attitude toward school property

constructive 1 2 3 4 destructive 5

L. Acceptance of school rules

accepts 1 2 3 4 resents 5

J. Acceptance of teacher's role

acceptant 1 2 3 4 rebellious 5

ADJUSTMENT TO CLASSROOM BEHAVIOR RATING _____

TOTAL RATING _____

*Items adopted from Medinness First Grade Adjustment Scale

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